

MONTHLY NOTICES
OF THE
ROYAL ASTRONOMICAL SOCIETY.

VOL. XLV. FEBRUARY 13, 1885. No. 4.

EDWIN DUNKIN, F.R.S., President, in the Chair.
Rev. Edward Allen, M.A., Castlechurch Vicarage, near
Stafford;
Rev. John Burgess, 90 Cheriton Road, Folkestone; and
P. Edward Dove, 9 Argyll Street, Regent Street, W.;
were balloted for and duly elected Fellows of the Society.

REPORT OF THE COUNCIL TO THE SIXTY-FIFTH ANNUAL GENERAL
MEETING OF THE SOCIETY.

The following table shows the progress and present state of
the Society :—

	Compounders	Annual Subscribers	Non-resident	Mathematical Society	Total Fellows	Associates	Patron	Grand Total
December 31, 1883 ...	226	371	2	3	602	49	1	652
Since elected	+ 3	+ 23	..	..	..	+ 3	..	..
Deceased	— 3	— 9	— 1	..	..	— 3	..	..
Resigned ... ..	..	— 5	..	..	..	..	..	..
Expelled ... ..	..	— 1	..	..	..	..	..	..
Removals	+ 1	— 1	..	..	..	..	..	..
December 31, 1884 ...	227	378	1	3	609	49	1	659

Mr. Common's Account as Treasurer of the Royal

RECEIPTS.

[illegible]

EXPENDITURE.

£1,701 2 4

Audited and found correct, Jan. 7, 1885.

ROBT. J. LECKY.
RICHARD INWARDS.

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Assets and present property of the Society, January 1, 1885 :—

	£	s.	d.	£	s.	d.
Balance at Bankers', Dec. 31, 1884	338	9	2			
„ in hand of Assistant Secretary on account of Turnor and Horrox Funds... ..	8	7	11			
	<hr/>					
	346	17	1			
Less due to Assistant Secretary on Petty Cash account	4	9	1			
	<hr/>			342	8	0
Due on account of subscriptions :						
14 Contributions of 3 years' standing ...	88	4	0			
30 „ 2 „ ...	126	0	0			
60 „ 1 „ ...	126	0	0			
6 Admission fees and first contributions ...	18	18	0			
	<hr/>					
Due from Messrs. Williams & Norgate for sales of Publications during 1884				38	10	8
£7,500 Consols, including the Lee Fund, the Turnor Fund, and the Horrox Memorial Fund.						
£5,700 New 3 per cent. Stock, including Mrs. Jackson-Gwilt's gift (£300).						
£500 Metropolitan Board of Works Stock.						
Astronomical and other MSS.; Books, Prints, Instruments, and Furniture.						
Unsold Publications of the Society.						
One Gold Medal.						

Report of the Auditors.

We, being two of the duly appointed Auditors, beg to lay before this Annual General Meeting of the Royal Astronomical Society the following Report:—

We have examined the Treasurer's account, and an account of the assets and property of the Society, and have found and certified the same to be correct.

The receipts and expenditure for the past year are as stated in the Treasurer's account. The cash in hand on December 31, 1884, including the balance at the bankers', amounted to 346*l.* 17*s.* 1*d.*

The funded property is the same as at the end of last year.

The books, instruments, and other effects have been examined and found to be in a satisfactory condition, so far as their safe keeping is concerned.

We have laid on the table a list of the names of those Fellows who are in arrear for sums due at the last Annual General Meeting, with the amount due against each Fellow's name.

ROBT. J. LECKY.
RICHARD INWARDS.

Stock in hand of volumes of the *Memoirs* :—

Vol.	At Society's Rooms	At Williams & Norgate's	Vol.	At Society's Rooms	At Williams & Norgate's
I. Part 1	6	...	XXIX.	413	...
I. Part 2	41	...	XXX.	163	...
II. Part 1	52	...	XXXI.	145	...
II. Part 2	19	...	XXXII.	159	...
III. Part 1	66	1	XXXIII.	166	1
III. Part 2	85	1	XXXIV.	166	6
IV. Part 1	80	3	XXXV.	110	6
IV. Part 2	92	3	XXXVI.	201	10
V.	107	4	XXXVII.	342	4
VI.	126	3	Part 1 XXXVII.	285	4
VII.	150	3	Part 2 XXXVIII.	279	1
VIII.	128	3	XXXIX.	251	4
IX.	135	3	Part 1 XXXIX.	256	4
X.	148	...	Part 2 XL.	279	1
XI.	155	...	XLI.	429	1
XII.	162	...	XLII.	244	2
XIII.	165	1	XLIII.	254	1
XIV.	373	3	XLIV.	236	1
XV.	141	...	XLV.	275	2
XVI.	168	1	XLVI.	279	5
XVII.	149	2	XLVII.	3	...
XVIII.	149	...	Part 1 XLVII.	21	...
XIX.	155	...	Part 2 XLVII.	2	...
XX.	156	...	Part 3 XLVII.	13	...
XXI. Part 1	314	...	Part 4 XLVII.	13	...
XXI. Part 2	99	...	Part 5 XLVII.	13	...
XXI. 1 & 2 (together)	63	1	Part 6 XLVII.	300	6
XXII.	157	...	XLVIII.	460	9
XXIII.	152	...	Part 1 Index to <i>Memoirs</i>	646	1
XXIV.	159	1			
XXV.	170	...			
XXVI.	174	2			
XXVII.	426	...			
XXVIII.	386	...			

Stock in hand of volumes of the *Monthly Notices* :—

Vol.	At Society's Rooms	At Williams & Norgate's	Vol.	At Society's Rooms	At Williams & Norgate's
I.	70	...	XXIV.	23	...
II.	72	...	XXV.	7	...
III.	...	...	XXVI.	9	...
IV.	...	...	XXVII.	3	...
V.	...	...	XXVIII.	71	1
VI.	38	1	XXIX.	52	...
VII.	2	...	XXX.	66	2
VIII.	139	2	XXXI.	97	...
IX.	22	3	XXXII.	117	5
X.	175	1	XXXIII.	102	2
XI.	185	1	XXXIV.	82	2
XII.	11	2	XXXV.	64	1
XIII.	150	3	XXXVI.	32	1
XIV.	109	3	XXXVII.	39	3
XV.	124	2	XXXVIII.	102	1
XVI.	107	2	XXXIX.	100	1
XVII.	136	1	XL.	114	3
XVIII.	166	...	XLI.	115	5
XIX.	57	...	XLII.	122	4
XX.	34	...	XLIII.	128	5
XXI.	17	...	XLIV.	131	10
XXII.	32	...	Index to <i>Monthly</i> <i>Notices</i>	582	2
XXIII.	28	...			

In addition to the above volumes of the *Monthly Notices*, the Society has a considerable stock of separate numbers of nearly all the volumes. With the exception, however, of Vols. XXXVI. to XLIV. no complete volumes can be formed from the separate numbers in stock.

Instruments belonging to the Society.

- No. 1. The *Harrison* clock.
- „ 2. The *Owen* portable circles, by Jones.
- „ 3. The *Beaufoy* circle.
- „ 4. The *Beaufoy* transit instrument.
- „ 5. The *Herschel* 7-foot telescope.
- „ 6. The *Greig* universal instrument, by Reichenbach and Ertel. The transit telescope, by Utzschneider and Fraunhofer, of Munich.

- No. 7. The *Smeaton* equatoreal.
 „ 8. The *Cavendish* apparatus.
 „ 9. The 7-foot Gregorian telescope (late Mr. Shearman's).
 „ 10. The variation transit instrument (late Mr. Shearman's).
 „ 11. The universal quadrat, by Abraham Sharp.
 „ 12. The *Fuller* theodolite.
 „ 13. The standard scale, by Troughton and Simms.
 „ 14. The *Beaufoy* clock, No. 1.
 „ 15. The *Beaufoy* clock, No. 2.
 „ 16. The *Wollaston* telescope.
 „ 17. The *Lee* circle.
 „ 18. The *Sharpe* reflecting circle.
 „ 19. The *Brisbane* circle.
 „ 20. The *Baker* universal equatoreal.
 „ 21. The *Reade* transit.
 „ 22. The *Matthew* equatoreal, by Cooke.
 „ 23. The *Matthew* transit instrument.
 „ 24. The *South* transit instrument.
 „ 25. A sextant, by Bird (formerly belonging to Captain Cook).
 „ 26. A globe showing the precession of the equinoxes.
 The *Sheepshanks* collection :—
 „ 27. (1) 30-inch transit instrument, by Simms, with level and two iron stands.
 „ 28. (2) 6-inch transit theodolite, with circles divided on silver; reading microscopes, both for altitude and azimuth; cross and siding levels; magnetic needle; plumbline; portable clamping foot and tripod stand.
 „ 29. (3) $4\frac{6}{10}$ -inch achromatic telescope, about 5 feet 6 inches focal length; finder; rack motion; double-image micrometer; two other micrometers; object-glass micrometer; one terrestrial and ten astronomical eyepieces, applied by means of two adapters; equatoreal stand, and clock movement.
 „ 30. (4) $3\frac{1}{4}$ -inch achromatic telescope, with equatoreal stand; double-image micrometer; one terrestrial and three astronomical eyepieces.
 „ 31. (5) $2\frac{3}{4}$ -inch achromatic telescope, with stand; one terrestrial and three astronomical eyepieces.
 „ 33. (7) 2-foot navy telescope.
 „ 34. (8) Transit instrument of 45 inches focal length; with iron stand, and also Ys for fixing to stone piers; two axis levels.
 „ 35. (9) Repeating theodolite, by Ertel, with folding tripod stand.
 „ 36. (10) 8-inch pillar sextant, by Troughton, divided on platinum, with counterpoise stand and artificial horizon.

- No. 37. (11) Portable zenith telescope and stand, $2\frac{3}{4}$ -inch aperture and 26 inches focal length; 10-inch horizontal circle and 8-inch vertical circle, read to $10''$ by two verniers to each circle.
- „ 38. (12) 18-inch Borda repeating circle, by Troughton, $2\frac{1}{8}$ -inch aperture and 24 inches focal length; the circles divided on silver, the horizontal circle being read by four verniers, and the vertical circle by three verniers, each to $10''$.
- „ 39. (13) 8-inch vertical repeating circle, with diagonal telescope, by Troughton and Simms; circle divided on silver, reading to $10''$; a 5-inch circle at eye-end reading to single minutes; horizontal circle 9 inches diameter in brass, reading to single minutes.
- „ 40. (14) A set of surveying instruments, consisting of a 12-inch theodolite for horizontal angles only, reading to $10''$; two sets of adjusting plates; tripod stand with enclosed telescope; heavy stand for theodolite; Y piece of level; two large and three small ground-glass bubbles divided; level collimator, object-glass $1\frac{5}{8}$ -inch diameter and 16 inches focal length; micrometer eyepiece, comb, and wires; mercury bottle and trough.
- „ 41. (15) Level collimator with object-glass $1\frac{5}{8}$ -inch diameter and 16 inches focal length; stand, rider-level, and fittings.
- „ 42. (16) 10-inch reflecting circle, by Troughton, reading by three verniers to $20''$; counterpoise stand; artificial horizon with mercury; two tripod stands.
- „ 43. (17) Hassler's reflecting circle, by Troughton, with counterpoise stand.
- „ 44. (18) 6-inch reflecting and repeating circle, by Troughton and Simms, contained in three boxes, two of which form stands. Circle divided on silver, reading to single minutes; two inside arcs divided to single degrees, 150 degrees on each side; artificial horizon and mercury.
- „ 45. (19) 5-inch reflecting and repeating circle, by Lenoir, of Paris.
- „ 46. (20) Reflecting circle by Jecker, of Paris, 11 inches in diameter, with one vernier reading to $15''$.
- „ 47. (21) Box sextant; reflecting plane and level.
- „ 48. (22) Prismatic compass, by Troughton and Simms.
- „ 49. (23) Mountain barometer.
- „ 50. (24) Prismatic compass, by Thomas Jones, mounted with a cylindrical lens.
- „ 51. (25) Ordinary $4\frac{1}{2}$ -inch compass with needle.
- „ 52. (26) Dipping needle, by Robinson.
- „ 53. (27) Compass needle, mounted for variation.

- No. 54. (28) Magnetic intensity needle, by Meyerstein, of Göttingen; a strongly fitted brass box with heavy magnet; filar suspension.
- „ 55. (29) Box of magnetic apparatus.
- „ 56. (30) Hassler's reflecting circle, by Troughton; a $10\frac{1}{2}$ -inch reflecting and repeating circle, with stand and counterpoise, divided on platinum with two movable and two fixed indices; four verniers reading to $10''$.
- „ 57. (31) Box sextant and glass plane artificial horizon, by Troughton and Simms.
- „ 58. (32) Plane $2\frac{3}{8}$ -inch speculum, artificial horizon, and stand.
- „ 59. (33) $2\frac{1}{2}$ -inch circular level horizon, by Dollond.
- „ 60. (34) Artificial horizon, roof, and trough; the trough $8\frac{1}{4}$ by $4\frac{1}{2}$ inches: tripod stand.
- „ 61. (35) Set of drawing instruments, consisting of 6-inch circular protractor and common protractor, T-square: one beam compass.
- „ 62. (36) A pentagraph.
- „ 63. (37) A noddy.
- „ 64. (38) A small Galilean telescope with object-glass of rock crystal.
- „ 65. (39) Five levels.
- „ 66. (40) 18-inch celestial globe.
- „ 67. (41) Varley stand for telescope.
- „ 69. (43) Telescope, with the object-glass of rock crystal.
- „ 70. Portable equatoreal stand.
- „ 71. Portable altazimuth tripod.
- „ 72. Four polarimeters.
- „ 74. Registering spectroscope, with one large prism.
- „ 76. Two five-prism direct-vision spectroscopes.
- „ 78. $9\frac{1}{4}$ -inch silvered-glass reflector and stand, by Browning.
- „ 79. Spectroscope.
- „ 80. A small box, containing three square-headed Nicol's prisms; two Babinet's compensators; two double-image prisms; three Savarts; one positive eyepiece, with Nicol's prism; one dark wedge.
- „ 81. A back-staff, or Davis' quadrant.
- „ 82. A nocturnal or star dial.
- „ 83. An early non-achromatic telescope, of about 3 feet focal length, in oak tube, by Samuel Scatliffe, London.
- „ 84. A Hollis observing chair.
- „ 85. Double image micrometer, by Troughton and Simms.
- „ 86. $4\frac{1}{2}$ -inch Gregorian reflecting telescope, by Short, with altazimuth stand and 6-inch altitude and azimuth circles and two eyepieces.

- No. 87. $3\frac{1}{4}$ -inch Gregorian reflecting telescope with wooden tripod stand.
- „ 88. Pendulum with 5-foot brass suspension rod, working on knife edges, by Thomas Jones.
- „ 89. A Rhabdological Abacus. A contrivance invented by Mr. H. Goodwyn, consisting of a box filled with compartments, in which are square rods covered with numbers, which can be arranged so as to facilitate the labour of multiplying high numbers.
- „ 90. An Arabic celestial globe of bronze, $5\frac{3}{4}$ inches in diameter.
- „ 91. Astronomical time watchcase, by Professor Chevalier.
- „ 92. 2-foot protractor, with two moveable arms, and vernier.
- „ 93. Beam compass, in box.
- „ 94. 2-foot navigation scale.
- „ 95. Stand for testing measures of length.
- „ 96. Artificial planet and star, for testing the measurement of a fixed distance at different position-angles.
- „ 97. 12-cell Leclanché battery.
- „ 98. 2 feet 6 inch navy telescope with object-glass $2\frac{1}{2}$ inches, by Cooke, with portable wooden tripod stand.
- „ 99. 12-inch transit instrument, by Fayrer & Son, with level and portable stand.
- „ 100. 9-inch transit instrument, with level and iron stand.
- „ 101. Small equatoreal sight instrument, by G. Adams, London.
- „ 102. Sun-dial, by Troughton.
- „ 103. Sun-dial, by Casella.
- „ 104. Sun-dial.
- „ 105. Box sextant, by Troughton and Simms.
- „ 106. Prismatic compass, by Schmalcalder, London.
- „ 107. Compass, by C. Earle, Melbourne.
- „ 108. Prismatic compass, by Negretti and Zambra.
- „ 109. Dipleidoscope, by E. Dent.
- „ 110. Abney level, by Elliott.
- „ 111. Pocket spectroscope, by Browning.
- „ 112. Small brass astrolabe.
- „ 113. Double sextant, by Jones.
- „ 114. Two models, illustrating the effects of circular motions.
- „ 115. A cometarium.
- „ 116. A pair of 18-inch globes.
- „ 117 } Two old sun-dials.
- „ 118 }

- No. 119. Specimens of rulings on speculum metal, by Prof. W. A. Rogers, presented by H. J. Chaney, Esq.
 „ 120. A 6-prism spectroscope, by Browning, presented by J. D. Perrins, Esq.
 „ 121. Improved maximum and minimum thermometer, presented by E. J. Spitta, Esq.

The following instruments are lent, during the pleasure of the Council, to the undermentioned persons:—

- No. 4. The *Beaufoy* transit instrument, to the Observatory, Kingston, Canada.
 „ 22. The *Matthew* equatoreal, to Mr. Brett.
 „ 23. The *Matthew* transit, to Captain W. Noble.
 „ 74. Registering spectroscope, with prism, to Mr. R. J. Lecky.
 „ 99. 12-inch transit, to Rev. A. Freeman.

From the *Sheepshanks* collection:—

- No. 27. (1) 30-inch transit instrument and stand, to Mr. G. M. Whipple.
 „ 29. (3) Clock and equatoreal mounting, to Mr. R. Bryant.
 „ 29. (3) Three micrometers, to Mr. E. Ristori.
 „ 30. (4) $3\frac{1}{4}$ -inch equatoreal and stand, to Mr. H. Sadler.
 „ 31. (5) $2\frac{3}{4}$ -inch telescope and stand, to Mr. E. Ristori.
 „ 34. (8) Transit instrument, to Prof. C. Pritchard.
 „ 36. (10) 8-inch pillar sextant, to Mr. R. Bryant.
 „ 69. (43) Telescope, with rock-crystal object-glass, to Dr. W. Huggins.

No. 29. (3) Telescope, lent to the Transit of *Venus* Committee, and lost in the “City of Brussels,” has not yet been replaced.

The Gold Medal.

The Council have awarded the Society's Gold Medal to Dr. Huggins for his researches on the motions of Stars in the line of sight, and on the photographic spectra of Stars and Comets. The President will lay before the Society the grounds upon which the award has been founded.

Publications of the Society.

Vol. XLVIII., Part 1, of the *Memoirs* has been published during the year. It contains the following paper:—

Heliumeter Determinations of Stellar Parallax in the Southern Hemisphere. By David Gill and W. L. Elkin.

Vol. XLVIII., Part 2, is in the press, and will shortly be published. It will contain the following papers:—

Fourth Catalogue of Micrometrical Measures of Double Stars, made at the Temple Observatory, Rugby. By G. M. Seabroke.

On the Relative Proper Motions of 40 Stars in the *Pleiades*, determined from Micrometric and Meridional Observations. By Prof. C. Pritchard.

Observations of *Mars* at the Opposition of 1884. By E. B. Knobel.

On the Corrections required by Hansen's "Tables de la Lune." By E. Neison.

Sur une inégalité lunaire à longue période. By M. C. Gogou.